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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/041,631	01/10/2002	Hajime Ito	Q68026	6578

7590 12/01/2003

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EXAMINER	
STORMER, RUSSELL D	

ART UNIT	PAPER NUMBER
3617	

DATE MAILED: 12/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/041,631	ITO ET AL.	
	Examiner	Art Unit	
	Russell D. Stormer	3617	

-- *The MAILING DATE of this communication app ars on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 August 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10-35* is/are pending in the application.

4a) Of the above claim(s) *10-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-33* is/are rejected.

7)☒ Claim(s) *34 and 35* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Drawings

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show the dendrites as described on page 16 of the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 23, 25, 27, 29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morgan.

Morgan teaches a cast wheel comprising a hub portion, a rim portion, and a plurality of spokes. As seen in figures 3 and 4, the spokes have an open rear side and a taper. The taper angle is not disclosed.

It is well-known that cast shapes must have a tapered form to permit the cast product to be removed from the mold or die. This angle is generally ranges from 1

degree to 3 degrees as a minimum taper to allow the product to be removed from the mold or die without damage to either. Therefore, it would have been well-known to those in the wheel casting art that since the minimum taper angle of the spokes could be as little as 1 degree, an angle of 3.5 degrees or less would have been obvious as desired given the particular use of the wheel and the visual impression desired.

With respect to claim 27, the measurements of portions of the wheel are considered to be obvious mechanical expedients determined by the size of the wheel, the intended use, the desired cost of the wheel, etc.

It is noted that the wheel of Morgan is not described as a light-alloy wheel, but those of ordinary skill in the art would readily have been able to adapt the wheel to be cast from other materials such as a light alloy and therefore to form the wheel of Morgan from a light alloy would have been obvious to those of ordinary skill in the art based on the desired weight and strength of the wheel.

3. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Morgan in view of Kato et al (newly cited).

For at least part of the spoke of the wheel of Morgan to comprise a DAS value of less than 30 μm would have been obvious as taught by Kato et al (see sample No. 1-1a-3 in TABLE 1) in order to attain a desired strength of the spoke.

4. Claims 22, 24, 26, 28, 30, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morgan in view of Kato et al.

Morgan teaches a cast wheel comprising a hub portion, a rim portion, and a plurality of spokes. As seen in figures 3 and 4, the spokes have an open rear side and a taper. The taper angle is not disclosed.

It is well-known that cast shapes must have a tapered form to permit the cast product to be removed from the mold or die. This angle is generally ranges from 1 degree to 3 degrees as a minimum taper to allow the product to be removed from the mold or die without damage to either. Therefore, it would have been well-known to those in the wheel casting art that since the minimum taper angle of the spokes could be as little as 1 degree, an angle of 3.5 degrees or less would have been obvious as desired given the particular use of the wheel and the visual impression desired.

With respect to claim 26, the measurements of portions of the wheel are considered to be obvious mechanical expedients determined by the size of the wheel, the intended use, the desired cost of the wheel, etc.

The wheel of Morgan is made of cast metal, the metal is not described as a light-alloy, and the formation of dendrites is not discussed.

Kato et al teaches a cast light metal alloy wheel which has specific desired DAS values in specific areas of the wheel. From this teaching it would have been obvious to those of ordinary skill in the art to adapt the wheel of Morgan to be cast from other materials such as a light alloy in order to reduce the weight of the wheel. Further, it is obvious that the cast light alloy wheel would have a dendrite in at least part of the spoke portions, and for the spoke portions to have a DAS value of less than 30μm would

have been obvious as taught by Kato et al (see TABLE 1) in order to specify the strength of the spokes.

Allowable Subject Matter

5. Claims 34 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6. Applicant's arguments filed August 29, 2003 have been fully considered but they are not persuasive.

With respect to claims 23, 25, 27, 29, and 31, it is felt that those of ordinary skill in the art would readily have found a taper angle of less than 3.5 degrees for the spoke to be obvious based on the common knowledge in the casting art. The citation of page 1342 of the Machinery's Handbook was cited to reference this well-known aspect of casting metals. Although Applicants have presently various arguments against the Machinery's Handbook, this reference was not used against the claims and only cited to show a known practice. However, it should be pointed out that the use of a taper for cast articles would apply to many different forms and different types of casting methods beyond what is shown in the Handbook.

Applicants refer to page 16 of the specification for support for the claimed dendrites, but this passage only briefly describes the dendrites (although it appears to

be adequate for antecedent purposes as the dendrites are broadly claimed) and the drawings do not show them.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Miller reference shows an additional of a wheel with a spoke portion which has a tapered section for the reason of facilitating removal from a mold.

The citation in the last office action of page 1342 of the Machinery's Handbook shows the well-known principle of allowing at least a 1 degree taper on a cast shape which is to be removed from a mold or die.

8. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. The addition of the limitation drawn to the spoke portion having a dendrite in new claim 22 necessitated the use of Kato et al.

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

rds

November 21, 2003

RUSSELL D. STORMER
PRIMARY EXAMINER 11/21/03